

**MANAGED IP ROUTING SERVICES FOR L2 OVERLAY IP VIRTUAL PRIVATE
NETWORK (VPN) SERVICES**

5

ABSTRACT OF THE INVENTION

A method and apparatus for providing IP-VPN services for customers and service providers utilizing layer-2 point-to-point connectivity. The method and apparatus include exchanging unique loop-back addresses of customer edges (CE) between

- 10 the CEs via a respective data virtual circuit therebetween, and sending IP addresses of customer networks associated with each CE to an associated IP service controller (IPSC). The associated IPSC broadcasts the IP addresses of the associated customer networks to other IPSCs, and each CE sends to an associated IPSC, a list of received loop-back addresses. Each IPSC then sends to
- 15 an associated CE, customer network addresses received from other IPSCs, and each CE populates a local routing table with information mapping the customer networks with a data virtual circuit.